Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

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☞See advertisement on last page.

Poetry.

For the Scientific American.

A WISH.

Give me a little vine-clad cot,
Upon some shady lawn,
Where the birds may sweetly carol forth,
Their songs at early dawn,
I'd have the trees all clustered round
Just like a fairy grove,
With little shadowy walks in which
To rest when I might rove.

The sun should peep down through the leaves
And shine upon bright flowers,
And Fays and Wood-nymphs for their dance,
Should have such rosy bowers,
And through the grove a rill should run,
With banks of mossy green,
Where the moonbeam's silvery light, should play
On the waters dancing sheen.

I'd have a modest faithful wife,
These joyous things to share,
And by our fond and mutual love,
We'd drive away dull care,
Together we would ramble forth,
And her sweet bird-like voice,
Should wake soft echoes through the glade,
And make the woods rejoice.

And there sweet love, our home should be,
And 'neath the arching vine,
I'd hear thee say those sweetest words,
That thou art ever mine.
Love should be borne on every breeze,
On every streamlet's hum,
And like a dream, thy life should seem,
Say dearest will you come.

ALFRED WHEELER.

LABOR.

What a hushed and solemn stillness
Did the pulse of nature keep,
As in the early morning
I lay awake from sleep,
And longed for something that would break
The silence long and deep.

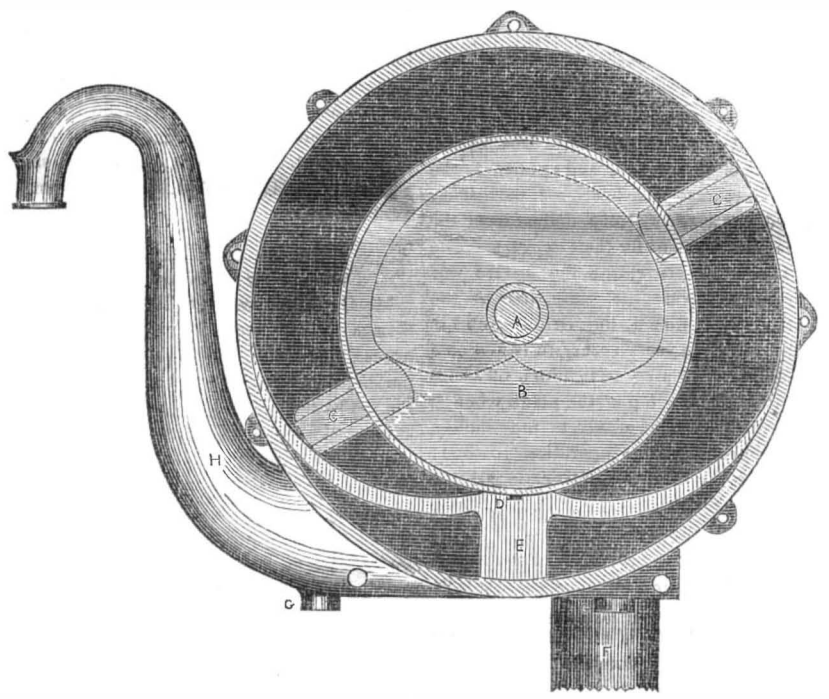
Till I heard the first faint footfall
Echo in the street below,
And then I heard the restless hum
Louder and nearer grow,
Till it seemed as if a multitude
Were hurrying to and fro.

But now the dawn has broken,
And Labor calls her train,
Up from the slumbers of the night,
In the town, and on the plain,
And life has put in motion
Her thousand wheels again.

And I bless thee, O my father,
That I refresh'd can start
From my bed of pleasant slumber,
With willing hand and heart,
Still in the busy scenes of life
To act my humble part.

Yes, thank God for human labor,
That man can plough the soil,
And in the mighty fields of thought
Search for the hidden spoil,
O! I'd rather never know repose
Then never think and toil.

IMPROVED STEAM AND WATER ROTARY ENGINE.



This invention relates to improvements in a Rotary Engine to be propelled by steam, or for pumping and forcing water. The above cut represents the engine as a rotary pump, and is a semi-sectional view of the interior arrangement. The inventor is Mr. Albigence W. Cary, of Brockport, Monroe county, N. Y., and he has removed one great objection to rotary pumps and engines, viz. a difficulty in keeping them steam and water tight. The improvements made relate to the packing of the pistons, so as to prevent friction and keep the chambers of the cylinder tight, also in providing a perforated crescent shaped partition which divides the chamber of the cylinder from the exhaust and supply tubes to answer as a strainer when used for pumping water. It can be used either in a horizontal or vertical position as required. The chamber and heart cam is cast in one piece, so that there is only one plate to be bolted and packed to keep the whole chamber tight. The machine is simple, easily constructed, easily repaired and not expensive. As a force pump no farmer should be without one, even if it was for nothing more than to mount a small one on a wheel-barrow to sprinkle the trees of his orchard with suds or salt and water, &c. to destroy caterpillars, while for a force pump in cases of fire, it is a most convenient and effective hydraulic machine.

DESCRIPTION.—A, is an axle cast or fitted into the moveable or revolving drum B. The drum B, revolves in the interior of the chamber its rim sliding in grooves cast in the circular side plates, so as to move perfectly tight. In width, it is in proportion to its diameter as 1 to 3. C C, are pistons, or they may be called sliding valves. They move round with the drum B, and slide therein in grooves alternately out and in guided in their motion by the shape of the heart cam against the periphery of which they press, each slide being driven full into the groove when it comes to E, a dividing butt of the exhaust and supply ways This butt is a piece of metal packed on the end D, against which the drum and slides move steam tight. G, is a broad flange for the spout to rest upon any standard made for that purpose, as it is very portable and intended to be moved about with great ease. F, is the supply pipe, and H, is the spout or discharge pipe. When used for pumping, the drum is turned by a crank on the axle. The water enters through F, and is forced out of H, with a force that is astonishing and regular.—The pistons are packed in a very peculiar manner. They have interior orifices communicating with the steam or water under the packing, so that the steam or water gently expands the packing when the engine is in operation, and keeps the chambers perfectly tight. The pistons are packed on their ends, and also their upper and lower surfaces in a kind of dovetailed manner, so simple that any person can repack them when required. The manner in which the pistons are packed, and also the crescent strainer, is something new and useful indeed to rotary pumps and engines. The crescent wing and also the cam, have been known before, yet not combined in the same way, nor so well. It will answer as well for a rotary steam engine as for a rotary force pump, and we have seen it operate with a very imperfect model in a manner that surprised all who saw it.

Measures have been taken to secure a patent for the improvements made.

Public Speakers.

It is stated that Daniel Webster speaks at the rate of from eighty to one hundred and ten words per minute; Gerrit Smith, from seventy to ninety; Dr. Tyng, from one hundred and twenty to one hundred and forty; Mr. Botts, from one hundred to one hundred and twenty; Mr. Clay from one hundred and thirty to one hundred and sixty; Mr. Choate and Mr. Calhoun, from one hundred and sixty to two hundred.

A Turtle's Age.

The editor of the New Haven Journal has been shown a land turtle, by Mr. Elias Bassett, of Hampden, which he first found upon his farm more than forty years ago, and marked with his initials, "E. B.," with the date of "1800" which are yet very plain and distinct. He does not appear to have varied in size since the inscription, and hence it is inferred, that he was of age at that time. The question now is, how many hundred years do they live.

Novel Challenge.

An English gentleman has challenged the Great Reading Railway Company, to run a race of half a mile, between one of its engines and his horse, for a stake of one thousand guineas. The match is proposed to be decided on the Reading race course, which is parallel with the railway.

RAIL ROAD NEWS.

Auburn and Rochester Railroad.

The work of relaying the Auburn and Rochester Railroad, with the heavy T. Rail is progressing rapidly. Thirty miles of the track is already down, a part of the iron weighing 60 pounds to the yard, and the remainder 70 pounds. By the month of September, probably, the entire line of railway, from Rochester to the Hudson River, will be relaid with the T rail.

Atlantic and St. Lawrence Railroad.

Eleven miles of this road were lately opened. It now extends from Portland, to North Yarmouth.

The work is of a most firm, solid and substantial character. The broad guage adds to this appearance of solidity.

The train of cars leaving Albany on Saturday evening for Buffalo, will hereafter remain over at Auburn until Sunday evening.

The Attica and Buffalo Railroad Company will hereafter run one train only on Sunday, leaving Buffalo at 7 o'clock P. M.

Girard and the U. S. Banks, and the Vicksburg Railroad.

The agreement made by Col. McCahen, in Mississippi, for the repossession of the Vicksburg Rail Road and other property belonging to that institution, has been fully carried out, the Court of Common Pleas having authorized the advance of $75,000 by the trustees of the United States Bank, $75,000 having previously been paid by certain stockholders and the Girard Bank.

The result of this agreement, together with the fulfilment of the compromise between the stockholders and the creditors, will make the property of great value to the stockholders. The Girard bank will be benefitted by an increased value of their claim and interest, equal, it is believed, to at least $300,000 The United States Bank secures the whole amount of their special debt, $280,000 and an interest worth in all about $800,000.

Railway Travelling in England.

A late report of the Commissioners of Railways in the United Kingdom shows an increase in the number of passengers on all the railways open of 120 per cent, and in the total income of nearly one hundred per cent, as follows:—

The number of miles open in the beginning of 1847, was 3,053. The number of passengers in 1847 of the first class was 6,572,714 2nd class, 18,699,288; 3d. class, 15,165,318; Parliamentary, or cheap class, 6,985,494; mixed, 3,229,357. All railways to which the act requiring cheap trains apply, are required to run one train daily, including sundays, if they run any Sunday trains; carrying passengers at a fare not exceeding a penny a mile, at an average rate of speed not less that 12 miles an hour including stoppages. The carriages are required to be provided with seats, and protected from the weather.

The whole amount of money which had been received for the construction of Railways in the United Kingdom to the end of the year 1847, was £167,321,856, The total extent of railways authorized to the year 1847 was 11,673 miles, with a capital of £336,580,-210.

On the 3,305 miles of railway which were open for use on the 1st., of May, 1847, there were employed as servants of the several companies, 47,218 persons. There were at the same date employed in the construction of railways, 256,509 persons; making the number of persons employed in the construction and working of railways 303,717.

A line of House's Telegraph between this city and Boston is about to be erected, in opposition to the present line.

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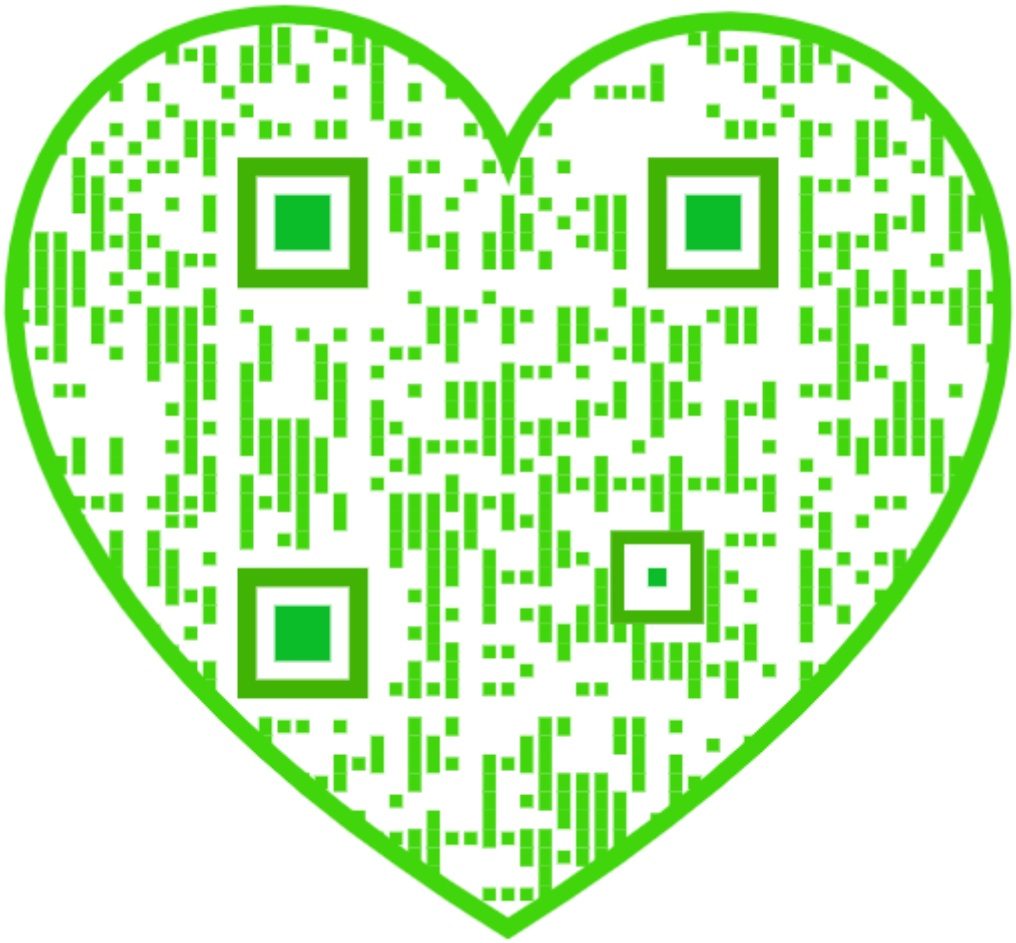

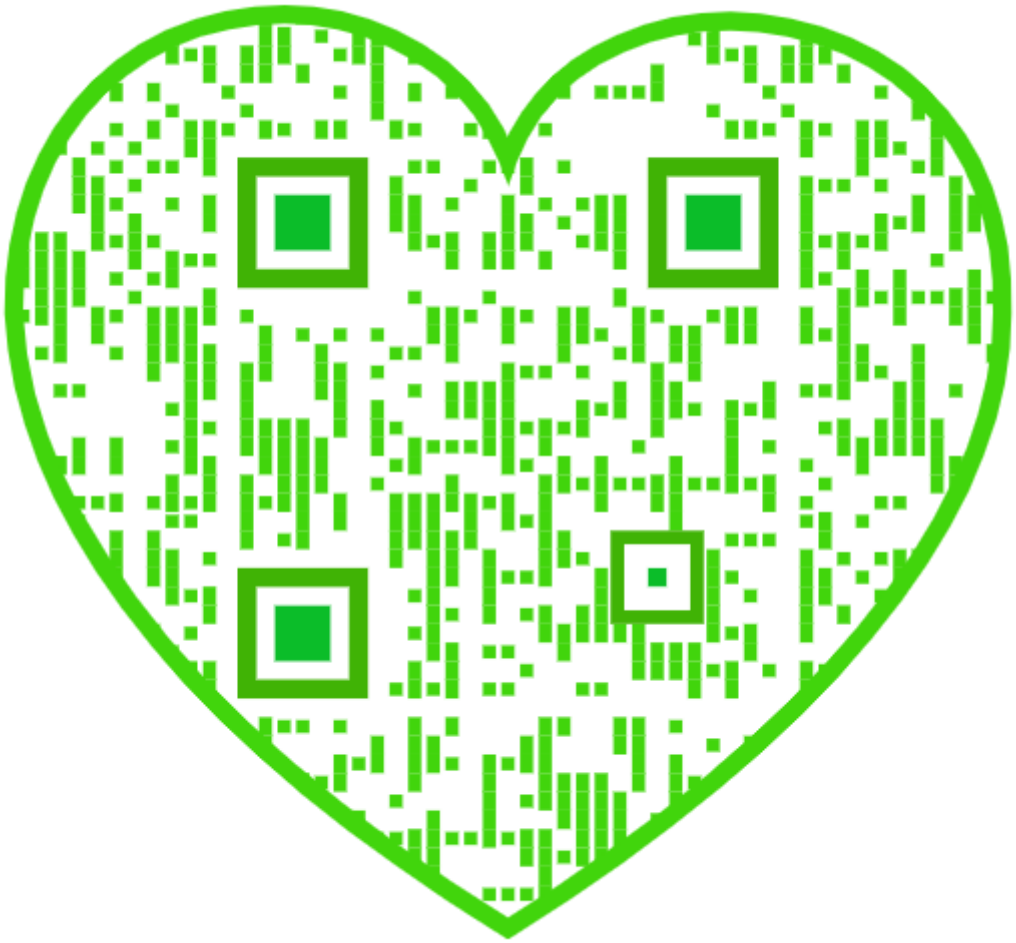

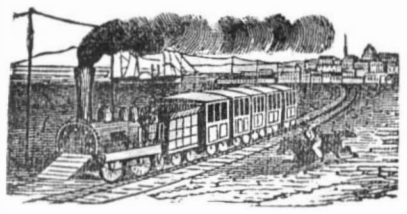

TABLE OF RAILROADS.

Giving the Names, Distances and rates of Fare.

	Miles.	Fare.
Eastern R. R.—Boston to Portland,	105	$3 00
Boston and Maine do do	110	3 00
do and Lowell, do to Lowell,	26	65
do and Worcester, to Worc'str.	44	1 25
do and Prov., to Providence,	42	1 25
Fitchburg, Boston to Baldwinsville	71	1 75
Fall River, do to Fall River,	53	1 35
Old Colony, do to Plymouth,	37½	1 00
Western, Worcester to Albany,	156	3 75
Nashua and Lowell,	15	40
Concord, Nashua to Concord,	34	80
Norwich and Worcester,	60	1 50
New Haven and Springfield,	62	1 87
Bridgeport,	98	2 00
New York and Harlem,	53	1 00
New York and Erie,	87	1 50
Long Island,	95	2 00
Camden and Amboy, New York to Philadelphia,	90	3 00
New York and New Brunswick,	33	75
do and Philadelphia,	88	4 00
Reading, Phil. and Pottsville,	92	3 00
Philadelphia and Baltimore,	97	3 00
Westchester and Columbia,	32	75
Phil., Lancaster and Harrisburg,	107	4 00
do Germantown & Norristown,	17	40
Harrisburg and Chambersburg,	56	2 12
Balt. & Ohio, Balt. to Cumberland,	179	7 00
Baltimore and Washington,	40	1 60
do and Susquehanna,	71	3 13
Washington and Richmond, including portage,	133	5 50
Louisa, Gordonsville,	50	3 25
Richmond to Petersburg,	22½	1 00
Winchester and Potomac,	32	2 00
Petersburg and Roanoke, Weldon,	63	3 00
Weldon to Wilmington,	161½	4 00
Wilm'gtn. to Charleston, steamer,	170	4 00
Gaston to Raleigh,	87	4 00
South Car., Charleston to Augusta	136	6 75
Columbia, Branchville to Colum.,	68	1 38
Georgia, Augusta to Atlanta,	171	7 00
Athens Branch,	39	1 95
Western and Atlantic, Dalton,	100	5 00
Central, Savannah to Macon,	194	7 00
Macon and Western, Atlanta,	101	4 00
Montgomery and West Point,	60	3 00
Vicksburg and Jackson,	47	3 00
Albany and Schenectady,	17	50
Greenbush and Troy,	6	20
Troy and Schenectady,	20½	50
Utica and Schenectady,	78	3 00
Utica and Syracuse,	53	2 00
Syracuse and Auburn,	26	1 00
Auburn and Rochester,	77	3 00
Rochester and Attica,	44	1 56
Attica and Buffalo,	31½	94
Buffalo and Niagara Falls,	22	75
Lockport and Niagara Falls,	24	74
Michigan Central, Detroit to Kalamazoo,	146	4 40
Detroit and Pontiac,	25	1 00
Erie and Kal., Toledo to Adrian,	35	1 00
South. Mich, Monroe to Hillsdale,	70	2 00
Mad River, Sandusky to Bellefontaine,	102	3 25
Little Miami, Cincinnati to Springfield,	84	2 00
Lexington and Ohio,	28	1 25
Mansfield and Sandusky,	56	1 50
Madison and Indianopolis,	86	3 00

Shoeing Horses.

At a meeting of the Royal Agricultural Society of England, some time since, Professor Sewell remarked that he had found old horses hod with a layer of leather, forming an artificial sole between the shoe and the hoof, recover from the severe affections causing injuto the hoof; such, for instance, as contractions, brittleness, sand cracks, or even disease of the-foot itself, as thrushes, canker, corns, &c. and perfectly regain its original elasticity and firmness. The mode in question had been practised by Prof. Sewell for the last thirty years.

Canal around the Falls of St. Mary.

It appears that another effort is to be made for the construction of this great work, the connection link in the navigation of the great chain of Lakes. Mr. Felch Senator of Michigan, has submitted a report from the Committee on Public Lands, to which had been previously referred a petition of O. B Dibble, George C. Bates, and other citizens of Detroit, asking for the right of way, and the grant of land to aid in the construction of the ship canal around the Falls, and the joint resolutions of the Legislature of Michigan in relation to the same. The report recommends the cession of the right of way asked for, and the grant of 500,000 acres of land to aid in the construction of the Ship Canal.

Potato Cure.

A Perfect cure for the Potato Disease has at last been discovered, and applied to the crop in Germany. Dr. Klotsch of Berlin, has received a reward of 1,400 dollars from the Prussian Government for the discovery. The same manner of preventing the disease was discovered nearly at the same time by the celebrated Prof. Liebig, but Dr. Klotsch has tested it for three years successfully and on a large scale. The plan is to pinch off about half an inch of the top of the plant when it has reached a height of six to nine inches, and to repeat the same operation 10 to 11 weeks after the time of planting, on all the stems of the plant.

Poisonous Clams.

We have seen many accounts lately of people having lost their lives in various places along our coast from eating clams It appears to us that there is not sufficient data to found reasonable conclusions regarding the clams being the direct cause of these deaths. Some accounts, plain and unvarnished, are yet required. One account says that these poisonous clams have all been found to have a small black leech within them. If this is the case it argues that the clams were *a la morte.*

The Pine Distemper.

The Mobile Herald says that the disease which is destroying the pine forests of the Carolinas, has made its appearance in Baldwin co., Ala. It exhibits some singular phenomena. Occasionally it proceeds in a straight line, destroying not only the full grown trees but the small shoots just springing up. Then again it goes into circles, leaving trees in the intermediate spaces sound and vigorous. The trees die just as though they had been girdled: the leaves wither and fall off, and the trunk soon runs to decay. Our informant does not attribute the cause of this strange distemper to worms. The only one seen about it is the common one peculiar to the pine trees. His impression is, that the cause is entirely an atmospheric one.

Monster Snake

On the 4th inst, while Mr. Lyman Whitman with a friend was out gunning, in the town of Dunstable, N. H., near the somewhat celebrated springs, discovered a large black snake slowly crawling along the ground. Mr. Whitman fired, wounded the reptile, who, hissing, started furiously toward him, when a shot from his friend brought him to, but it was not until a third and a fourth charge had been given him, that he succumbed to his assailants.—Upon measuring him, he was found to be nine feet and seven inches in length.

Perfuming the Theatre.

The Broadway Theatre has a ventillating apparatus in it, which, by means of steam power throws 3000 feet of fresh air into the theatre per minute. By putting an ounce of cologne water into the apparatus, the whole theatre (they say,) is made delightfully fragrant—novel certainly.

Colonization.

There are now five expeditions afloat, bearing five hundred emancipated emigrants to Liberia. An equal number anxiously await the ability of the Society to send them.

Quick Sailing.

The steamship Niagara was absent from Boston only twenty-seven days, during which she made two passages across the Atlantic, and laid in Dock five days.

Lead Pipes.

The Bostonians are now, in view of the speedy introduction of the waters of Long Pond, discussing a question which agitated the scientific circles of Gotham, when the Croton was on the way hither, to wit: the best material for conveying fresh water through houses. The consulting physicians of Boston Drs. Warren, Shattuck, Bigelow, Hayward, and Ware, have made a report at the request of the city on the different materials for the service pipes of the Long Pond Water. They come to the conclusion that there is no appreciable mischief, to be apprehended from common lead pipe, provided that the water be allowed to flow for a little while through the pipes before beginning to use it in the morning. The water of wells is apt to contain saline matters which corrode lead and produce a poisonous solution, but open river or pond water, though it dissolves a small portion of the lead at first, soon forms an insoluble coating upon the lead, after which no solution can be detected.

Discovery of Indian Relics.

Mr. Garrett Clawson, of Hector Falls, near Seneca Lake, recently ploughed up the bones of an Indian, together with a small copper kettle, a tobacco box, tomahawk, bullets, &c.—The tomahawk was brass, pointed with steel, and seemed to answer the double purpose of the "pipe of peace, and the hatchet of death." Considerable interest was manifested by those who had collected around the spot where they had so long laid in peace, for each seemed anxious to obtain some relic of him whose history had thus been buried with him—"something to remember him by" —and a general division of bones took place —one choosing one, and another another part of the remains, as it seemed to strike their fancy.

Palpitation of the Heart.—Tea, Coffee and Tobacco.

Professor W. Parker, of the New York College of Physicians and Surgeons, at a recent clinical lecture, examined a man who was troubled with palpitation of the heart. The report states that no physical signs of organic disease of the heart could he detected; and hence we may conclude, says Prof. C. "with much certainty, that all the cardiac disturbance is purely functional, depending on derangement of the digestive organs—and this organ depending on the free use of tobacco, tea and coffee, and confinement within doors." What then are the indications of treatment? Shall we give physic in such a case? Will physic cure bad habits? Not a bit of it. Let the patient simply throw away his tobacco, his tea and his coffee; adopt a plain, wholesome diet, and take regular exercise in the open air, and he will soon be well; in a word, remove the causes of derangement and the effects will cease.

Atmospheric Locomotive.

A locomotive for common roads is being built at Putney (England) on a plan got up by Baron V. Nathen, acting by compressed air. He has, it is said, succeeded in overcoming the obstacles hitherto encountered in its application.

Of this, we have strong doubts and fears, the end of which will be found to be the failure of the plan. No machine can propel itself mechanically, by performing an action to drive itself by the reaction.

Heads and Texts.

The excellent and eccentric Rowland Hill when once in Scotland, was found fault with because he had no heads and particulars in his sermons. When he next ascended the pulpit he made an apology for past omissions, and announced that he should now have four heads—how many particulars he did not yet know:—first, he should go round about his text; second, he should come up to his text; third, he should go through his text; and fourth, he should go away from his text.

Fearful Fall.

A British soldier lately fell from the cliff of Cape Diamond, at Quebec, into St. Lawrence street, a distance of three hundred feet. He was, of course dashed to pieces. It is not known how he came to fall, but it is supposed that he got dizzy in looking over the heights.

Thrilling Scene at Niagara Falls.

During a severe gale at Niagara Falls, a short time since, the foot bridge was made to vibrate until one section of the cables slipped off the saddle, which caused the planking to turn up edgewise, but no other damage to this section of the bridge. One man only was at this part when the wind struck it, who made his way to the shore amid the fearful commotion. He had reached within a few feet of the shore, when a flying section of the unfinished foot bridge struck him, knocking him from his position, but he was so near, that two men caught him, and saved him from being precipitated into the fearful gulf! He was but just saved, yet not injured. While this was being enacted, the second foot bridge, which was planked half way across the river, was broken near the shore, and a section of some 40 feet carried away, leaving four men floating fearfully in mid air. Their case, though for a few minutes, was one of the most imminent danger, vibrating as they were over the fearful gulf full 60 feet, holding on to whatever presented itself, until the storm was past. They were then relieved from their uneasy post by means of the basket and ladder.

The Ten Hour Law.

A portion of the manufacturing establishments in this county, says the Chester, Pennsylvania, Republican, are now standing, the proprietors averring that they are unable to prosecute their business without serious loss to themselves. Another portion have reduced the wages of their operatives one-sixth, and are running ten hours, and another portion, the largest, we believe, are going on as usual, having entered into special contracts with the men in their employ to work the time required of them, previous to the passage of the ten hour law.

Harvest Drink.

Ten gallons of cold water, 1 gallon of molasses, 1 quart of vinegar, and half a pound of ginger, well stirred together, makes a refreshing drink. Try it. Spirituous liquors, are, as they ought to be, almost entirely banished from the harvest field.

Revenge Extraordinary.

A wag having a dispute with a man who kept a sausage shop, and owing him a grudge, ran into his shop one day as he was serving several good customers, with an immense dead cat, which he quickly deposited on the counter, saying, "This makes nineteen; as you are so busy now we'll settle some other time;" and he was off in a twinkling. The customers aghast soon followed him. So says the Boston Mail.

Respect.

Honor and integrity always command respect from the most vicious and profligate, and they will stand when crowns crumble to dust, and are forgotten, and when "man's best monuments have passed away."

A nautical invention has been tried at the Charlestown, Mass., Navy Yard. It is a contrivance invented by Capt. G. W. Taylor, for floating out anchors and chains, by the use of air bags made of india rubber, instead of carrying them in boats, as is the present practice, to the imminent danger of the lives of the boats' crews. The experiments were witnessed by Commodores Downes and Parker, and many other naval officers and nautical men, and were considered as quite satisfactory.

Wisconsin extends from Lake Michigan to the Lake of the Woods—a distance of 1000 miles. Dividing this whole territory into two equal parts, each part would be as large as the great State of New York.

The longest day in Great Britain, is two hours and twelve minutes longer, than the longest day in the United States, and the shortest day in the United States is one hour and fifty minutes longer than the shortest day in great Britain.

A gutta percha band, 214 feet long and 2 feet wide, has been made in New York for belting in one of the great Lowell manufactories. It is all one piece. We learn that Way & Brothers are agents for articles of this substance, in Hartford.

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Vegetable Instinct.

Of all the plants, the confervæ alone possesses the power of locomotion, properly so called; and perhaps of all plants they alone consist of solitary individuals. Other plants are composed of communities, the buds being the inhabitants, the stems consisting of store rooms and galleries, the little spongy bodies at the extremities of the roots being the true locomotive organs—the honey bees of the hive, collecting and elaborating the sustenance of the body politic; and if you expect trees to dance hornpipes for your diversion, you must get some city or bee-hive to set them the example. But if trees, as a whole, do not walk upon the surface of the earth, they in other respects exhibit abundant instances of spontaneous motion. For example, the tendency of plants to incline their stems and turn the upper surface of their leaves to the light; the direction which the extreme fibres of the roots will often take to escape from light, or to reach the best nourishment; the folding up of the flower on the approach of rain; the rising and falling of the water lilly, and the peculiar and invariable direction assumed by the twining stem in ascending its prop.

If a pan of water be placed within six inches on either side of the stem of a young pumpkin or vegetable marrow, it will in the course of the night approach it, and will be found in the morning with one of its leaves floating on the water. This experiment may be continued nightly until the plant begins to fruit.

If a prop be placed within six inches of a young convolvulus, or scarlet runner, it will find it, although the prop may be shifted daily. If after it has twined some distance up the prop, it be unwound and twined in an opposite direction, it will return to its original position, or die in the attempt; yet notwithstanding, if two of these plants grow near each other, and have no stake around which they can entwine, one of them will alter the direction of its spiral, and they will twine round each other. Duhamel placed some kidney beans in a cylinder of moist earth; after a short time they commenced to germinate, of course sending the plume upwards to the light, and the root down into the soil. After a few days the cylinder was turned one fourth round, and again and again this was repeated, until an entire revolution of the cylinder had been completed. The beans were then taken out of the earth, and it was found that both the plume and the radicle had bent to accommodate themselves to every revolution, and the one in its effort to ascend perpendicularly, and the other to descend, they had formed a perfect spiral. But, although the natural tendency of the roots is downwards, if the soil beneath be dry, and any damp substance be placed above, the roots will ascend to reach it.

A tree growing from an old wall, or clift of a rock, will, as soon as it has exhausted the surrounding soil, send a stem down to the land beneath; and Stephens, in his search among ruins in Central America, found, he tells us, magnificent trees of a great height and size, upon the top of some of the high walls of the deserted edifices of a lost race, which having sent stems down to the soil on each side formed by this means a firm support, and being thus, as it were, strapped together with living cables they remain to this day in their original form.

The plants in a hothouse do not direct their leaves to the stove in quest of heat, or the open door in quest of air, but to the sun in quest of light.

Plants in a cellar or dark room struggle towards the light; plants in an area turn the upper surface of their leaves towards it; on the contrary. their roots sedulously avoid it.

The tendril of a vine, or the stem of a creeping plant, never makes any turn until it comes in contact with some object around which it can entwine; after which, it produces in a spiral direction around the object held in its embrace.

The strawberry plant will thrust its runners completely across a garden walk on to a bed of soil on the opposite side; where it will for the first time, as it were perceiving its object to be gained, push out roots, and form a new plant. Trees have been found which have taken root on one side of a deep ravine, and having exhausted the sterile soil on that side, have pushed their roots across the abyss, and having gained the opposite side, have there struck deep root into the fertile soil.

An eminent modern writer narrates that among the collection of palm trees, was one furnished with hooks near the extremity of each frond, evidently designed for attaching it to the branches of trees for support, when growing in its native forest. The ends of the fronds were all pendant but one, which, being nearer to the rafters of the conservatory, lifted its end several feet to fasten to the rafter; none of the other fronds altered their position, as they could not have reached the rafter had they attempted so to do. What a striking recognition in the tree of an evident fortuitous circumstance!

The Pandanus, a native of the Isle of France sends out roots from the stem for support. If a tree leans to one side, endangering its safety, it puts additional roots at some distance above the rest at the inclining side, which reach the earth, and form supports to the trunk perfectly analagous to the shores and timber work used by architect to prop a building in danger of falling.

Model Potato Garden.

The following account of a model potato garden, described by the London Gardner's Chronicle, will be found to be very interesting, and instructive, and will, no doubt, be attentively read by all our subscribers.

The Model Potato Garden, at Solingen, not far from Elberfield, in Rhenish Prussia, is one of the curiosities best worth seeing in that interesting manufacturing district. It has been established by that indefatigable struggler against the difficulties of the times, M. Peter Knecht, whose ardor in the cause of the poor was on this occasion stimulated by family recollections, as his grandfather of the same name brought the first potatoes into the district of Solingen, in 1731, from Nantes, in France. The garden is about two English acres in size, divided into beds and borders by a broad gravel walk, which runs in the figure of a square. The experiment beds are carried in parallel sections across the centre plot, running north and south; and they also occupy some of the borders. The land has not been drained, but the high position, and dry nature of the climate in summer, would seem to render that precaution here superfluous. Great care is taken in turning over the ground, and pulverizing it as much as possible. An alternation with vegetable crops is also observed. The manure, chiefly composed of house refuse, well mixed with clay and gypsum, to fix the ammonia, is turned over frequently during the winter, and when it is spread upon the land, is mixed with quick lime, which again disengages the ammonia. With this compost, ashes of wood, burnt clay, and all other substances calculated to loosen the soil, may be mixed. When bones are used, they are dissolved in sulphuric acid and water. Fresh stable-dung, and bone dust have been found by the experience of the gardeners not to be good manure for potatoes. A compost, well turned over, thoroughly decayed and mixed, ensures a sound, and full-sized root. The selection of the seed is also very essential. Not only should the soil be changed, but care should be taken to choose only the healthiest roots, which have been well wintered, and, if possible, grown in ground that was not dunged. The selection should be made in the autumn, and the seed potatoes kept on moderate-sized deal boxes, in a dry cellar. Amongst the potatoes in the garden there are some with very short haulm, that are planted in rows 1 1-2 feet from each other: the long-haulmed kinds are in rows 2 1-2 feet asunder. The average produce of the neighborhood is stated to be, in good years, 80 pounds, on the rood of 16 square feet, which is more than ten tons to the English acre. What the crop in the garden averages has not been ascertained, as the kinds grown are very numerous and very various in yield. Nearly 500 kinds of potatoes from all parts of the world have been tried in this as a nursery for the neighboorhood, or is sent to those who know its value, even at a great distance. In the bad season of 18,-44, when there was a total failure in that part of the continent, the following sorts produced in small quantity, but preserving their quality;—A small early potato from Dartur, in Upper Egypt; the large yellow Malta; the large white Chili (from seed;) a white potato from Intermedios, Central America, (from seed:) a red potato from California; a dark red from Porto Allegro, La Plata, South America; the large black sago potato from Nukahiva, New Zealand, said to be improved in New Zealand, from the Aracacha of Peru; a white potato from Nova Scotia; and a long white from Canada (partially damaged,) M. Knecht particularly renewing the stock from American seed. Chili, Peru, and Porto Allegro, between Monte Video and Buenos Ayres, he pointed out as the best sources; but praised the orange tawny potato of Java, and especially the large black, New Zealand potato, which is both mealy and highly productive.

Discovery of Mummies at Durango in Mexico.

The Texas Star says that a million of mummies have been discovered on the environs of Durango, in Mexico. They are in a sitting posture, but have the same wrappings, bands, and ornaments as the Egyptians. Among them was found a poignard of flint, with a sculptured head, chaplets, necklaces, &c., of alternated colored beads, fragments of bones polished like ivory, fine worked elastic tissues, (probably our modern india rubber cloth) mocasins worked like those of our Indians, to-day, bones of vipers, &c. It remains to continue these interesting researches, and America will become another Egypt to antiquaries, and her ruins will go back to the oldest period of the world, showing doubtless that the ancestors of the Montezumas lived on the the Nile, and that their luxurious civilization was broken, and overthrown by the hardy hordes of Asiatic Tartars, who came down from Behring's Straits and the Rocky Mountains The scenes of Attilla and Alaric in Rome and Greece, were rehearsed at an earlier day on the shores of California, and the plains of Mexico. It is unknown of the mummies above mentioned what kind of embalment was used, or whether it was nitrous depositions in the caves where they are found; a fact of importance is stated, that the shells and the necklaces are of a marine animal found at Zacatekas, on the Pacific, where the Columbus of their forefathers probably landed from the Malay, Hindostan or Chinese coast, or from some islands on the Indian Ocean.

Subterranean Fire in England.

The village of Lower Haugh, near Rotherham, England, presents a curious and interesting aspect. An extensive bed of coal beneath the village is on fire, and has been in that condition, burning with greater or less intensity, for at least twenty years. The coal in certain places bassets out—that is, comes up to the surface of the ground; and it was at one of these bassets that the fire originally commenced, having been ignited by a clamp (a fire for burning stones intended for road materials.) The subterranean fire has continued to advance in various directions up to the present time, its progress being manifested by the appearance, at intervals, of smoke and flame at the surface of the ground: the spread of which has generally been stopped, however, by puddling the eruptions with clay, &c. A feeling of apprehension as to the ultimate fate of the village has always continued to prevail, and some years ago the destruction of the mausoleum of the Wentworth family was threatened by the approach of the fire, but, happily, the calamity was averted by severing the bed of coal, for which purpose a shaft was specially sunk. Latterly the work of destruction appears to have been going on with unwonted rapidity, and has created a corresponding degree of alarm. The ground in several large tracts, is one huge hotbed, and where the heat is not so intense as to destroy vegetation, the villagers turn it to very good account in raising crops of vegetables. Two crops of potatoes are secured in one season. The exposed earth is quite warm, even in the depth of winter. Were this state of things confined within prescribed limits, it would be very well, and the villagers would regard it as an unmixed blessing, but this is by no means the case. The unnatural heat engenders a disagreeable smoke, which is continually ascending and adulterating the atmosphere, doubtless to the detriment of animal health; and the houses in the worst localities are often filled with warm air, strongly charged with sulphur, rendering them, as habitations, little better than a coal pit. The cellars naturally are the worst. Of course, it is impracticable to keep food in them; not unfrequently they cannot be entered with safety. How long this extraordinary state of things is to continue, no one can tell.

The Bank Swallow.

The bill and claws of the Bank Swallow being extremely hard and sharp, are admirably adapted for digging. The bill is small, but its very shortness adds to its strength, as it suddenly tapers to a point like a sailor's marlinspike, or rather like the points of a fine pair of compasses when shut. This fact our readers may verify by observing their operations early in the morning, through a small spy-glass, when they begin in the spring to form their excavations. In this way we have seen one of these swallows cling with its claws to the face of a sand bank, and peg in its bill as a miner would do his pickaxe, till it has loosened a considerable portion of the hard sand and tumbled it among the rubbish below. The holes made are nearly as circular as if planned out with a pair of compasses, though some are of an irregular form; but this seems to be caused more by the crumbling away of the sand than from any deficiency in the original workmanship. The holes or galleries produced by these birds are more or less tortuous to their termination, extending inwards to a distance of two or three feet, where a bed of loose hay, and a few of the smaller breast feathers of geese or fowls are spread for the reception of the eggs.

Charm of Music.

Naturalists assert that animals and birds, as well as "knotted oaks," as Congreve informs us, are sensible to the charm of music. The following may serve as an instance: "An officer was confined to the Bastile; he begged the governor to permit him the use of his lute, to soften, by the harmonies of the instrument, the rigors of his prison. At the end of a few days, this modern Orpheus, playing on his lute, was greatly astonished to see, frisking out of their holes, great numbers of mice, and descending from their woven habitations, crowds of spiders, who formed a circle around him, while he continued to breathe his soul-subduing instrument He was almost petrified with astonishment. Having ceased to play, the assembly, who did not come to see his person, but to hear his instrument, immediately broke up. As he had a great dislike to spiders, it was two days before he again ventured to touch his instrument At length, having overcome, for the novelty of his company, his dislike of them, he recommenced his concert, when the assembly was by far more numerous than the first; and in course of further time, he found himself surrounded by a hundred *musical amateurs*. Having thus succeeded in attracting this company, he treacherously contrived to get rid of them at his will. For this purpose, he begged the keeper to give him a cat, which he kept in a cage, and let loose at the very instant when the little hairy people were most entranced by the Orphean skill he displayed."

Remarkable Powers of Ventriloquism.

Phillippe, a favorite actor of the Theatre des Varieties, on his marriage with Mademoiselle Voluais, the actress, proceeded with her into Lorraine, to visit an estate they had purchased; when the tenants having thought proper to favor them with a magnificent reception, in the course of the day, the bridegroom, deserting his place of honor, strolled out among the revellers. When he appeared to be only conversing in a grave manner with the Mayor of the place, to the dismay of the simple villagers, strange voices were heard to issue from tuns of wine, reproaching them with their excesses, and from wheelbarrows reproving them for their idleness. The whole village fancied itself bewitched, while Phillippe enjoyed for the first time in his life, on his own account, a talent he had so often exercised for the amusement of others.

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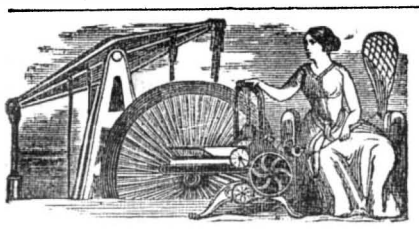


New Inventions.

Improvement in Brick Presses.

Within the past two months two patents have been secured for improvements in Presses for making Brick. The one was taken out by R. Wilson, of Houston, Texas, and the other by J. W. Ward, of Cambridge, Mass. The patent of the former is for a combination of the feeding guage with the pounder and a horizontal guage in the hopper, and also the arrangement of a cam and lever to operate the mould plate. The patent of Mr. Ward is for the combination of a water tube to wet the vent of the clay from the hopper to the mould —something very necessary to make good Press Brick.

Pneumatic Steam Guage.

Mr. Augustus King, of Southington, Conn. has planned and put in operation a very simple Steam Guage. It is a combination of a water and compressed air guage, and works with great correctness.

Hardening Hides.

The following patented process for hardening hides, extracted from Examiner Page's Report, will be found to be not a little interesting. The hide is hardened and rendered transparent as horn.

In the first place they are submitted to the sweating operation or the liming, for removing the hair. They are then submitted to the action of powerful astringents, such as sulphuric acid, alum or salts of tartar dissolved in water at a high temperature. During the operation of clearing the hides of the oil, they are rubbed, or friction is applied in any convenient way, whereby the hide becomes thickened; and after this process is finished, they are rinsed in warm water and dried.— After being dried they are submitted to the action of boiling linseed, or any other drying oil, and retained in the hot oil until a yellow scum appears on the surface of the hides, when they are withdrawn. If it is desired to impart color to the material, as staining it in imitation of tortoise shell, it is done while in the oil bath, and when removed from the bath it is submitted to pressure in moulds for the formation of various articles, as knife handles, &c. For the article, when it comes hot from the oil bath is very soft and pliable, but when allowed to cool, it becomes hard and susceptible of a high polish.

Fitzgerald's Braiding Machine.

In reply to a correspondent, a few weeks since, we stated that we were not aware that there were any contrivances in existence for braiding leghorn, &c. for bonnets. It escaped our memory at the time that Mr. Elisha Fitzgerald of this city, was the inventor of a most wonderful and ingenious machine for this purpose, and has had them in constant operation for some time. His establishment, corner of Hester and Elizabeth streets, was destroyed by fire not long ago, by which twenty two of these machines were destroyed — Each machine turns out in one day about as much braid as one good workman can do by hand in two weeks.

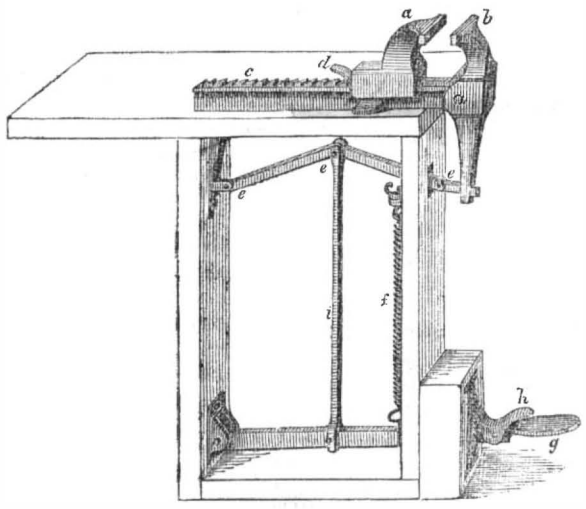
Great improvement in Filtering Water.

A new and original invention has been introduced in England. It is a cylindrical filter made of stone, and so constructed as to supersede all cleansing. The passing of the water through the stone frees it from all impurities in suspension, and, according to the testimony of an eminent analytical chemist, is calculated to benefit the public health materially. The filter is now in operation in many of the mansions of the principal nobility of the metropolis. The Lords of the Admiralty, struck with the utility of the invention as a means of preserving the health of the officers and seamen, by rendering the water at all times on board ship pure and soft, irrespective of climate or time, have introduced it into the Royal Navy.

Novel Clock.

The most improved clocks now in use, only indicate (in point of time) the hour, the minute, the second, and the day of the month which last indication requires to be attended to, and altered at the end of every month of less than thirty-one days. An invention has just been made in Leeds, England, of a clock which will indicate the year, thus :—" Monday, July 17th, 1848 :" and at twelve o'clock at night, the clock will alter the indications all at once, and exhibit, " Tuesday, July 18th 1848," and so on, day by day, for hundreds of years. All the attention required, is to keep the clock in motion by winding it up regularly as usual. Whether the month has thirty or thirty-one days, or as in February, 28 and in leap year 29 days, the indications will be found to be always correct. This newly invented piece of machinery, says the Leeds Mercury, is at present contained in a small box, which may be attached to any ordinary clock.

NEW PATENT LEVER VICE.

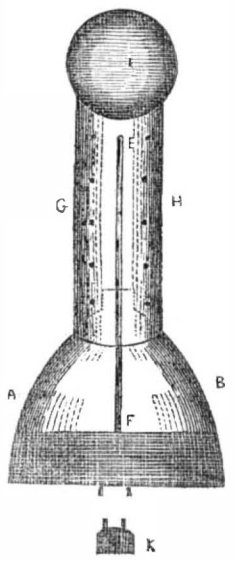


This is an engraving of a new Vice, invented by Mr. J. Peck, and improved by Mr. L. Pardee, of New Haven, Conn. It is patented and possesses great strength and great power. It is made of wrought iron and is claimed to have better qualities than any now in use. It is worked entirely by the foot without laying down a tool for that purpose, and it can be changed to receive work from one-sixteenth to eight or ten inches in width as quickly as any other Vice can be moved one-fourth of an inch.

Description.—*a*, sliding jaw. *b*, jointed or swing jaw. *c*, rail on which the sliding jaw moves. *d*, click which catches in ratchet on rail *c*, and holds the sliding jaw firmly where placed. *E*, jointed lever (elbow joint) which turns on pins *e e*, and is attached to prong of rail *c*, and the lower end of the swinging jaw. *g*, toot lever with joint attached to leg of bench, and connected by rod *i*, with jointed lever *h*, click which catches in ratchet at the foot of the forward bench leg, and holds the jaws firmly as forced up by the combined levers ; it is easily tripped with the foot. *f*, is a spiral spring which lifts the foot lever and throws open the jaw.

It will be recollected that when this Vice is forced up it becomes very firmly attached to the bench and very solid for chipping and other heavy work that is required to be put into a Vice, and heavy work requiring both hands to lift can be very easily placed in it. It is certainly much easier for the mechanic, for the strain upon the breast in turning the screw is avoided. This Vice has been tested and found to be a useful invention, and one of them weighing fifty pounds has been found to possess as much power as an English Vice weighing seventy pounds. They are now manufactured by J. S. Griffing, State street, New Haven, Conn., and sold by Quincy & Dillapeere, at No. 81 John street this city.

Mode of Measuring the Depth of the Sea.

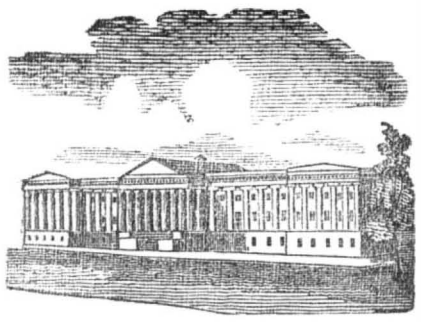


This cut is the figure of the ordinary seaguage, employed when the fathom line cannot be conveniently used. A B, is a guage bottle into which is fixed the guage-tube E F, the upper end of which is hermetically sealed, and the lower immersed in mercury. This is enclosed for protection, in a tube G H, pierced with holes which admit the water into the bottle ; and the whole is crowned with a large empty ball, or a full blown bladder. To the bottom of A B, a large weight K, is connected by a spring. The weight being attached to the instrument, they both sink until, striking on the bottom of the sea, the weight is detached, and the globe I, allowed to bring up the guage to the surface. In the descent, the water pressing to the surface of the mercury causes it to rise in the guage tube. By placing a small quantity of viscid matter on the surface of the mercury in the tube, the instrument becomes self-registering ; the viscid matter will adhere to the tube at the highest level to which it is raised, and will, therefore, indicate the space into which the air in the tube has been compressed ; consequently the depth of the water, which is reciprocally proportional to the space occupied by the air, may be ascertained.

Locomotives for Inclines.

A new and powerful engine has lately been built in Philadelphia, for mounting inclines on the Madison, Ia., line of Railroad. It was built under the direction of Mr. A. Cathcart, by Mr. Baldwin of Philadelphia. The incline for which it is built has a rack in the centre into which cog wheels on the engine bite their way up the hill. The grade is three hundred and seventeen feet to the mile. It mounts this incline with twenty two cars heavily loaded, with great ease. This engine is the most powerful for the same purpose ever constructed, but it is not new in principle, although Mr. Cathcart is both an ingenious and able engineer. Engravings of an engine to accomplish the same thing by the same means, are to be found in one of the numbers of the Illustrated London News for 1845, but we saw a model of the same invention three years previous to that, exhibited by a Mr. Harris. This new locomotive, however, is the first practical demonstration of the principle alluded to, and he that bringeth an invention into successful operation is deserving of great praise.

A large quantity of iron, over 1000 packages, was recently received in Liverpool, from Bombay, East Indies.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending July 11, 1848.

To Alfred Swingle, of Galveston, Texas, for improvement in Boring and Morticing Machines. Patented July 11, 1848

To Vincent Baker, of Weedsport, N. Y., for improvement in Folding Bedsteads. Patented July 11, 1848.

To N. A. F. Brewer, of Camden, S C., for improvement in Refining Gold and Silver.— Patented July 11, 1848.

To Samuel Rodman, of New Bedford, Mass. for improvement in the construction of Factory Chimneys. Patented July 11, 1848.

To James Young, of Jefferson, Me., assignor to William Young, of Washington, Me., for improvements in Rotary Ploughs. Patented July 11, 1848.

To Thomas C. Merrill, of Newbury, Mass. for improvement in Machinery for sawing irregular shapes. Patented July 11, 1848.

RE-ISSUES.

To Manoah Alden, of Ralston, Penn., for improvement in Blowers for Furnaces. Patented 18th April, 1848. Re-issued July 11, 1848.

To Frederick P. Dimpfel, of Philadelphia, Penn., for improvement in Furnace for economising Fuel and consuming Smoke. Patented 9th May, 1839. Re-issued July 11, 1848.

INVENTOR'S CLAIMS.

Cast Iron Car Wheels.

To Asa Whitney, of Philadelphia, Penn., for improvement in annealing and cooling Cast Iron Car Wheels. Patented 25th April, 1848. Claim.—I do not claim to be the inventor of annealing castings made of iron or other metal, when done in the ordinary way ; nor do I claim to be the inventor of any particular form or kind of furnace in which to perform the process, but what I do claim as my invention, and desire to secure by Letters Patent, is the process of prolonging the time of cooling, in combination with annealing railroad wheels in the manner above described, that is to say : in taking them from the moulds, in which they are cast, before they have become so much cooled, as to produce such inherent strain on any part as to impair its ultimate strength, and immediately after thus being taken from the moulds, depositing them in a previously heated furnace or chamber so constructed of such moterials, and subject to such control, that the temperature of all parts of the wheels deposited therein may be raised to the same point (say a little below that at which fusion commences) when they are allowed to cool as fast, and no faster than is necessary for each part of each wheel to cool and shrink simultaneously together, and no one part before another.

Ploughs.

To Frederick C. Smith, of Harper's Ferry, Va., for improvement in Ploughs. Patented 25th April, 1848. Claim.—Having thus described the construction and operation of my self-clearing brace coulter plough, what I claim therein as new and desire to secure by Letters Patent, is the combination of the inclined self-clearing coulter and point (in one piece) with the share and mould board, in such a manner that the coulter serves not only the purpose of a coulter, but also as a cutting edge for the mould board, and a support-brace for giving stiffness and strength to the share and mould board, substantially as herein set forth, not confining myself to the identical manner of accomplishing this as herein set forth, bnt to something substantially the same.

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NEW YORK, JULY 22, 1848.

Gas Engines.

We see it noticed in a number of our exchange papers that a Mr. Jagu has lately proposed at a meeting of the Academy of Sciences in Paris, to construct Locomotives to be propelled by carbonic acid, the principle of which is not to lose the gas, but after it has served to work the pistons, be made to return without loss, into a vessel similar to a portable gas-holder, to be placed in the hinder part of the locomotive, and thus an apparatus, so charged at a station, he says, might be made to work for years, until required to be repaired.

This is not a new invention, it has already been tried. In 1827, Mr. J. Brunell, secured a patent for a carbonic acid gas Engine, but it was laid on the upper shelf, and is now useful in furnishing a theme for Mr. Jagu to dilate upon before the Academy, and a paragraph for the newspapers. We have no more idea that carbonic acid will drive out the simple steam engine, than we have of gunpowder being a better and cheaper propellant than water. The carbonic acid will have both to be heated and cooled, as well as water, and although it exerts a force of 40 atmospheres, at a heat of 120 degrees Fah., yet it is far more dangerous than steam, as the fatal accident at the Polytechnic School of Paris, whereby a cast iron cylinder, as strong as a cannon, was shattered to pieces like the fragile vessel of a potter, was a sad evidence.

Young Men.

It is the misfortune of every mind that it commences existence in the same state as that of our rude forefathers and that the accumulated experience of the past—the knowledge gained while living by the mighty dead, must be learned over again by the youth who would strive to wear a crown of immortal renown. It is only then in civilized countries where men can be properly educated and fitted for the noble actions of a life of true usefulness. But even in a civilized land—a land of Universities and Bibles, we too often find men committing crimes worthy of the savage and not of the intelligent virtuous man. The great fountain that sends forth virtuous men and women, is a virtuous education. It is needless to say that this begins at an early age and within the walls of childhood's home. The school and the college may draw out and expand the powers of the mind, the education of the family may be said to make the mind of a good or bad quality—either to gather honey like the bee or distil poison like the wasp. True as this is, it is no less true that many young men are educated and trained up in virtue's ways who forsake them when they come to the years of maturity. This is particularly true of young men—mechanics and artisans that come into our cities from the country to learn their trades, who are apt to fall into evil company and spend their evening hours in idleness and dissipation. The end of these things is dishonor and disgrace.

We point to evils that have an existence in order to direct attention to duties that are incumbent upon our young men This is a land famed for freedom, religion and intelligence. It is the only beacon light of Republican freedom. On us as a nation, the eyes of the world are fixed—and according as we *behave ourselves* (we use a homely phrase) so is our influence felt by the rulers and inhabitants of other lands. To our young men we would say, upon your shoulders the future weight and glory of the republic must rest. Oh, then prepare to exhibit a noble and sublime example of self-government, and let the *model republic* continue to shine forth in the horizon of freedom as the sun of the system.

Young men, you must be virtuous and intelligent if you would be an honor to yourselves and your country. Those of you who come to learn trades in our cities, or to fill situations in commercial houses, we bid you beware of spending wastefully your spare moments—*spare* moments are the golden sands of life, barter them not away in the pursuit of folly but in the pursuit of wisdom and true knowledge. If you fail to do this, you are recreants to virtue, your country and freedom.

Outrage upon Inventors' Rights.

BOSTON, July 12th, 1848.

Messrs. Munn & Co.

RESPECTED SIRS.—Messrs. Elbridge Webber and Charles Hartshorn having finished a model of a new machine for turning Lasts and other irregular forms, I, along with them, started for Washington last Monday. After we arrived in Boston and had deposited the model on board the railroad cars, by some means Mr. Blanchard found out the nature of our journey to Washington with the model, and went to the United States Marshal and got him to attach and take possession of the model for infringement of his rights. So we are obliged to change our course and go home. We intended to call on you and have a cut of the machine in your paper, but you see Mr. Blanchard assumes to have power to prevent our carrying a model to Washington for the purpose of obtaining a patent. Now is it possible that he can obtain influence enough to sustain himself in such outrageous insults upon those who have equal rights and privileges granted by the Laws and Constitution of our land? If so, it seems useless to attempt to make improvements when it interferes with the interests of some privileged men. The machine was not made for sale or offered for sale, nor has it been used for turning any irregular forms, no farther than to operate the model to be certain that it operated as was intended, and never was intended to be used, but to be deposited in the Patent Office for the purpose of obtaining a patent. Mr. Blanchard never saw the machine until after it was taken by the United States Marshal.

N. O. MITCHELL.

The above letter will no doubt surprise our readers We believe that the act of the U S. Marshal was a high-handed piece of illegality. Allow such acts to be legal, and the most intolerant and cruel injustice might be done to all poor inventors by those who are wealthy. Tolerate such acts and improvements in mechanism will soon be numbered with the things that were. Just reflect for a moment upon the injustice done to these men. They had made a valuable improvement on a machine for turning irregular forms. They constructed a model, left the village of Gardiner, in Maine, on the 10th, and had reached Boston on their way to Washington. An inventor residing in Boston, who has had *his* patent twice extended, heard of the model being in the cars, and apparently fearful that *his* invention might be superseded, determined to prevent the model reaching the Patent Office. The U. S. Marshal with great energy and courage captures the model, and having taken it a prisoner from those who made it, "sheathed his sword for lack of argument," and smiled over this display of his patriotic prowess.—The scheme for preventing that model reaching the Patent Office has been successful for the present, but there is a day of reckoning coming. The inventors after incurring innocently much expense, have had to return to their homes; but have returned with a deep sense of the injustice done them, and a stern hatred to the despotic influence that robbed them of their property. Were such conduct legal, an inventor coming from distant Iowa to Washington with some new machine, might be stopped in his journey at this city by some sensitive patentee and made a ruined man—this is a logical inference deduced from the above letter. A model is not the infringement of an invention. The use even of a patented article for philosophical experiment, would "not be considered an infringement," and certainly a model of a new improvement cannot be an infringement. We should like to know what representations were made to induce him to take the model out of the inventor's hands, as it appears to us he could not and would not do so without an injunction granted by the District Court.—EDITOR.

Pumps for Vessels.

A correspondent of the Boston Daily Advertiser brings to our notice the great importance of having good pumps for all sea-going vessels. He says that "during this present year, and principally within a few weeks, there have been two barks, one brig and two schooners reported in distress from bad pumps, one of which, the bark Agnes, was abandoned at sea with a cargo of guano; another, the Golconda, from New York to Ireland, returned to New York with five feet water in her hold, with a cargo of corn; the brig Mary and Jane from New York to Jacksonville, in ballast, was knocked down in a gale, ballast shifted, sprung a leak, pumps choked, several feet water in her hold; succeeded in getting into Nassau, N. P., and was obliged, under the direction of a survey, to have her ceiling taken up so that the dirt could be removed to allow the bilge water access through the timbers which were badly clogged. The schooner Marblehead, from a southern port with corn and flour for Boston, sprung a leak in a gale, and her pumps became so badly choked that it became necessary to run her ashore on Gloucester beach to prevent foundering. The schooner Fair Play, from Philadelphia to Barbadoes, cargo corn and flour, was fallen in with abandoned Feb. 22, 1848, with several feet water in her hold and choked pumps, and the new and elegant steamer Hermann, was recently obliged to deviate from her outward passage to England and make a harbor at Halifax with choked pumps in addition to other damage suffered in a severe gale."

No person who pays a visit even to our best ships can fail to be impressed with the old "stick to the past" miserable ship pumps.—In fact the majority of our ships have pumps that any of our farmers would be ashamed of. They are inefficient, clumsy, and easily rendered useless. The above list of vessels that suffered from defective pumps, should be enough to convince any man of the necessity of adopting a more simple and efficient water pump.

The rotary pump of Mr. Cary, described on our first page this week, appears to us to be admirably adapted for vessels. There is no fear of choking and if any thing goes wrong, it can all be repaired above. The whole machinery is upon deck, contained in the inside of the cylinder, easy of access and easily repaired. All that is required to adapt it for vessels is simply to erect it on a stage on deck and connect the suction pipe with the well by means of leather hose, like that of a fire engine. There is nothing that will wear out. The packing may have to be renewed once every voyage, and the commonest seaman can do that.

Shipbuilding in this City.

Shipbuilding is very dull in this city at present, but there are ten ocean steamers in process of construction, some of which are already launched, and will soon be ready for service. Two are building for E. K. Collins's Liverpool line. They are larger than any of the American steamers, and no expense or labor is to be spared in ship or machinery that can improve their adaptation to the service for which they are destined. There are two for Sloo's line to Chagres; three for Howland & Aspinwall's line of Pacific steamers from Panama; two for the New York and Savannah line, and one, the Franklin, for the Bremen line. The keel of another will shortly be laid to run with the Crescent City to New Orleans, and two more are to be built to run with the Northerner and Southerner to Charleston, constituting a semi-weekly line.

Suspension Bridge.

Mr. Ellett, the distinguished Engineer, who has issued a pamphlet on the subject of a suspension bridge across the Connecticut near Middletown, makes a very fair offer, and very important one.

He proposes to build the bridge for the sum of three hundred thousand dollars; and he agrees to finish it so that the first class Engines may run across it at full speed, before he receives one cent on the contract. If he does not succeed, he receives nothing.

He goes farther; and offers to place in the hands of the Company, a reasonable sum of money in advance as a guarantee that his contract shall be fulfilled.

Cheapness of Foreign Railroad Iron.

The price of railroad iron, at the places from which the greatest supplies are derived, is a matter of great interest to all who are about to engage in the construction of railroads This article has been gradually falling in its principal producing market,—Wales—from its highest point, $63, down to $24 50 per ton at the shipping ports, which is about as low a price as it has ever reached. The Liverpool Times of June 17, remarks that the "demand for British iron for home consumption continues on a very reduced scale, and for many kinds lower prices have been submitted to." The price of freights from the shipping ports in Wales to New York, varies from $2 40 to $4 80 per ton. Railroad iron cannot long remain at its present low price abroad. It is much more likely to advance than to decline in price.

The Cotton Trade.

It is said that some of the Manufacturing Corporations of Lowell have within a week or two made a further reduction in the wages of their operatives, and that in consequence a number who have homes had quit work. The cause assigned for the reduction is, that the Companies cannot sell their goods for a profit in the present state of affairs, and that their warehouses in Boston are filled to overflowing.

Coal Trade.

The coal trade of Boston has become so important that the proprietors of the Merchants' Exchange, commenced, a fortnight ago, to keep upon a separate book a record of the vessels that arrive loaded with coal, together with the amount. From this book we learn, that during that period over 100 vessels have arrived, bringing nearly 25,000 tons of coal. The arrivals are chiefly from Philadelphia.

Fatal Test.

William Dotch of St. Louis, killed himself recently by drinking a few drops of the oil of bitter almonds, to prove it was not poison, which oil was used by a distiller in the manufacture of liquors.

Interesting to our Readers.

We are happy in being able to announce to our readers that that we have procured the services of a celebrated German chemist of this city, who will in future have the charge of preparing practical receipts for each number of this paper. The expense that accrues from this new feature is considerable and we hope the project will produce enough subscribers to pay us for the extra expense it incurs. The receipts which we publish can be relied upon as purely practical, and if any one will follow the rules therein given, and use good materials, they may rest assured of producing the effects desired.

Unprecedented Demand for Old Papers.

At the commencement of the present volume of the Scientific American we had nearly one thousand complete setts of the preceding volume on hand. Since that time we have had 500 copies of those setts bound, and the balance have been ordered by mail and sent in sheets. We are now obliged to inform our patrons that we are unable any longer to furnish *complete* setts in sheets, and that we have but fifty more copies left, which are bound. The price of the remaining fifty copies which are left will be hereafter $3 per copy (neatly bound,) or we can furnish a few more copies in sheets, minus Nos. 1, 10, 16, 17 and 46, at $2 per sett. All the numbers of the third volume can be had yet, at the subscription price.

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Arts, Manufactures and Machinery.

Accuracy of different kinds of work, and of copying.

The accuracy with which Machinery executes its work, is, perhaps one of its most important advantages; it may, however be contended that a considerable portion of this advantage may be resolved into a saving of time.

It generally happens, that any improvement in tools increases the quantity of work done in a given time. Without tools, that is, by the mere efforts of the human hand, there are, undoubtedly, multitudes of things which it would be impossible to make. Add to the human hand the rudest cutting instrument, and its powers are enlarged; the fabrication of many things then becomes easy, and that of some possible with great labor. Add the saw to the knife or the hatchet, and other works become possible, and a new course of difficult operations is brought into view, whilst many of the former difficulties are removed. This observation is applicable even to the most perfect tools or machines. It would be possible for a very skillful workman with files and polishing substances to form a cylinder out of a piece of steel, but the time which this would require would be so considerable, and the number of failures would probably be so large, that for all practical purposes such a mode of producing a steel cylinder might be said to be quite impossible.

The same process by the aid of the lathe and the sliding rest, is the everyday employment of hundreds of workmen.

It is more easy to make a good circle, than to produce a straight line. Of all the operations of art, that of turning is the most perfect. If two surfaces are worked against each other, whatever may have been their figure at the commencement, there exists a tendency in them to become portions of spheres. Either of them may become convex, and the other concave, with various degrees of curvature. A plain surface is the line of separation between convexity and concavity and is most difficult to hit. A similar difficulty takes place in figuring specula for telescopes; the parabola is the surface which separates the hyperbolic from the elliptic figure, and is the most difficult to form. If a spindle not cylindrical at its end is pressed into a hole not circular, and if the spindle be kept constantly turning, there is a tendency in these two bodies so situated to become conical, or to have circular sections. If a triangular piece of iron be worked round in a circular hole, the edges will gradually wear, and it will become conical. These facts, if they do not explain, at least illustrate the principles on which the excellence of work formed in the lathe depends.

The operations of printing the Numbers on Bank-notes is one which requires perfect accuracy: and although each number differs from all the others, it is accomplished by a few wheels.

The two last sources of excellence in the work produced by machinery depend on a principle which pervades a very large portion of all Manufactures, and is one upon which the cheapness of the articles produced seems greatly to depend The principle to which we allude is the system of copying; taken in its most extensive sense. Almost unlimited pains are, in some instances, bestowed on the original, from which a series of copies are to be produced; and the larger the number of these copies, the more care and pains can the manufacturer afford to lavish upon the original. It may thus happen, that the instrument, or tool actually producing the work, shall cost five or even ten thousand times the price of each individual specimen of its power.

As the system of copying is of so much importance, and of such extensive use in the Arts, we shall endeavor to classify a considerable number of those processes in which it is employed: not, however, pretending to give a complete list, and restricting ourselves to the shortest possible detail which will be consistent with a due regard to making the subject intelligent.

Operations of copying take place under the following circumstances; by Printing—by Casting,—by Moulding,—by Stamping,—by Punching,—with elongation,—with altered dimensions.

In our next we will refer to the different kinds of copying by printing.

Foreign Correspondence.

Gutta Percha.—Improvement in Lighthouses.—New Safety Lamp, &c. &c.

London, July 1, 1848.

There seems really to be no end of the application of Gutta Percha to the manufacture of articles both of utility and ornament. It is now made here into Harness of the most beautiful description, which is impervious to water, and neither cracks nor needs grease of any kind to keep up its flexibility or appearance. Stitching in harness being always the first to decay, it is altogether dispensed with in the gutta percha harness, and thus strength and economy are secured, and, being lighter than leather, almost imperishable. It can also be readily cleansed with a sponge and water Some of this kind of harness has been severely tested for some months by omnibus wear and tear, as well as on private carriages, and its economy over all kinds of leather harness, as well as its durability and beauty, put beyond question. In addition to harness, it is now being made into highly finished walking sticks, cricket and other balls, picture frames, fruit dishes, inkstands, trumpets and tubes for the ear, mouldings and ornaments of all kinds for architectural and other decorations, police clubs, pump buckets and substitutes for leather to hydraulic presses; colored thread, flat and round, rope and round band all sizes, from 1 to 2000 feet in a coil, thin sheet for milliners, dressmakers, hat, cap and bonnet manufacturers, tubing any diameter and thickness, forming any angle or curve, and unaffected by gas, alkalies, acids or other fluids.

An improvement in lighthouses has recently been invented here, which is calculated to render them better adapted to the purpose for which they are intended The inventor proposes to construct a sort of chamber beneath the lantern of the lighthouse, by cutting four or more circular apertures in all the present edifices, and fitting them with sashes of ground plate glass. Upon each of these glazed sashes, looking seaward, he proposes to paint a large initial letter, the length of which shall be double the size of the light displayed in the lantern above. The chamber would at night be illuminated by a lamp, which would render the initial letter visible at a very great distance. By day the letter would also be visible, and would serve to distinguish one light house from another.

A Rev. Gentleman of Huddersfield, Yorkshire, (Rev. W. Thorp,) has invented a new safety lamp, which will effectually remedy all the defects in the lamp of Sir H. Davy; affording five times more light, and being perfectly safe in every condition of the coal mine. The lamp received the unqualified approbation of a great number of persons, nine of whom were coal owners, or viewers of collieries, and more conversant with fire damp, than, perhaps, any other persons in Yorkshire. Two great defects exist in the old lamp of Sir H Davy—first, it affords too little light, and therefore the miners frequently prefer to work with a candle in danger rather than use it; secondly, it is not safe, and the Miners' Association of New Castle have just published "an exposition of the insecure nature of the Davy and other lamps as applied to coal mining." In order to obtain more light, Mr. Thorp introduces, with considerable ingenuity, the argand, or rather the solar burner, characterized by the circular wick, and the air admitted through its centre from the bottom of the lamp, protected, of course, by gauzes of wire. Connected with this part of the lamp is an adjustment, placed outside of the cistern, by which the wick can, with the greateat ease, be raised or lowered. Over the light is applied a chimney of iron, based with a few inches of glass, with air admitted to supply the exterior of the flame from the inside of the lamp. This is so securely fixed, that it cannot be displaced or broken from the ordinary falls or minor casualties to which these lamps are liable to be exposed. Having obtained the great desideratum, viz: a much higher illuminating power, or more than five times the quantity of light the Davy lamp affords, or that equal to two mould candles generally used by miners, the next object being to ensure perfect safety in every condition of the mine, there are inserted into the chimney four or five chambers of wire gauze; so that the flame of ignited gas has to traverse eight or ten meshes before it can possibly reach the exterior fire-damp; but as one mesh, as in the old lamp, is perfectly safe, unless exposed to a current, and as no lateral current of gas or air can be exerted upon the flame on account of the chimney, the lamp is perfectly safe. And it is found, by any artificial means, utterly impossible to pass flame through these chambers of gauze, so that it appears to be quite safe under every circumstance and condition of the mine. There are other advantages over the Davy lamp of no inconsiderable value:—1. It requires trimming only once a week: 2, the oil does not fall out if laid on one side: 3, it is much more easily cleaned; 4, the cheapest oil can be used in it

The inventor has refused to take out a patent for this lamp, and gives it for the public benefit.

Some of our wise heads have been discussing the originality of the use of ether and chloroform, and have come to the conclusion that the use of these agents is about "as old as the hills." One lecturer a few evenings since told us that ether was identical with the *nepenthe* of Homer, which Helen put into the bowl to cheer her guests; and which, according to Pliny, was a kind of herb, or extract from a herb, which when put into wine, drove away sadness. And chloroform, he insisted, was nothing more than the sweet "oblivious antidote" of Shakspeare.

Among the "fancy" articles brought out recently, I notice "A blessing to Mothers," in the shape of a new article of grub for children calculated to do away with the milk system; "Homoepathic Cocoa;" the "Patent Soutenir," a new article of table cutlery for eating asparagus; patent belt-band spring drawers and pantaloons; also, breeches upon "a new principle." The drawers are "warranted to prevent rupture and check corpulency!" a stock of which ought certainly to be provided at the public expense for the special use of your "City Fathers," as they could then "pile it in" without the slightest fear of a collapse.

The state of Mechanics and the Fine Arts throughout the whole extent of the convulsed Continent, presents at present the most uncheering aspect. The struggle for freedom engrosses the thinking as well the physical energies of all ranks and conditions of men.

The most unequivocal symptoms of the potato rot have again made their appearance in some parts of this country.

Yours, &c. M. R.

The Dismal Swamp.

The Dismal Swamp in Virginia and North Carolina is a fearful place. It is full of wild birds, wild beasts, reptiles and runaway negroes. Huge bull-frogs, nearly as large as a man's foot, with smaller specimens of the same genus, open a "grand concert" every night. Great indolent herons and other aquatic birds, too lazy to take a fish, unless he jumps out of his own accord, sit round on the trees. Dense swarms of musquitoes, ephemeræ and sandflies fill the air. At about sun down and after, all the animal life is in motion. Every throat is open. The croaking of the bullfrogs, buzzing of insects, cooing of turtle doves, and the sounds from a thousand musical instruments, pitched on as many different keys, make an assemblage of harmony and discord that defies description. The vegetation of the Swamp is more luxuriant than can be seen in any part of the world. The timber is pine, oak, sweet gum, black gum, holly, the beautiful tulip tree, the cypress, loaded down with its festoons of moss, the misletoe bough in dark green bunches growing about on many different trees, with different kinds of timber. Immense canebrakes, so thickly interwoven with vines that one might about as well attempt to walk through a brick wall as to force his way through. A canal is made through the swamp, and, part of the way, it goes through the lake, and on its banks runs the stage road. Snakes, lizards, scorpions, chameleons, and other loathsome reptiles, abound in great numbers.

The Prussian Parliament.

The deputies receive an allowance of three thalers (nine shillings) per day, and their travelling expenses. To some of the peasant representatives the allowance is indispensable for the journey. One of the deputies is a day laborer, a *proletarier*, but the great majority of the chamber consists of men in easy, if not wealthy circumstances. Even those classed as "peasants" are mostly occupiers of land—what we should call small farmers. One hundred and twenty-nine deputies are persons holding offices, either of the state or the municipalities; most of these are jurists or lawyers; there are forty-one clergymen; merchants and manufacturers, thirty-one; teachers and *Gelehrte Savans*, or it may be assumed, professors, twenty-seven; landed proprietors, twenty-six,—of these only three are holders of privileged estates (Rittergut,) which, have formerly belonged to the domains of one of the class of nobles, are still almost exempted from taxation; mechanics, seventeen; magistrates seventeen; physicians ten, military officers four; a prince of the reigning house, and four of the ministers; peasants, forty-five; agriculturists, or renters of larger parcels of land, five; two shopkeepers, one agent, one land surveyor, one day-laborer, and a town councillor. Of thirty-nine deputies, there is no special description; from the class of nobles there are twenty-four deputies returned. The majority of the peasant representatives (twenty-nine) have been elected in Silesia.

A Gentleman.

Did you ever see a gentleman? We have seen two or three in our day, but real gentlemen are very rare. A gentleman is one who treats every body with respect, whether he be black or white, low or high, poor or rich. He does not bow to wealth, scrape his knees to honor, nor holds his tongue when he sees wickedness in high places. You always receive from him a civil answer to your enquiry, and he kindly imparts to you any information in his power. He will not say a word to injure your feelings, or allude to a subject to pain your heart. Whatever may be done he will not manifest angry feelings, or use unbecoming language. He uses no profane or indecent words, smokes no cigars in your presence nor spits tobacco juice on your floors. He is the same kind and accommodating individual, from one week's end to another.

Three Poets in a Puzzle.

I led the horse to the stable, when a fresh perplexity arose. I removed the harness without difficulty, but, after many strenuous attempts, I could not remove the collar. In despair, I called for assistance, when aid soon drew near. Mr. Wordsworth brought his ingenuity into exercise, but, after several unsuccessful efforts, he relinquished the achievement, as a thing altogether impracticable. Mr. Coleridge now tried his hand, but showed no more grooming skill than his predecessors; for, after twisting the horse's neck, almost to strangulation, and the great danger of his eyes, he gave up the useless task, pronouncing that the horse's head must have swollen from gout or dropsy, since the collar was put on; 'for,' he said, 'it was a downright impossibility for such a huge *os frontis* to pass through so narrow a collar!' Just at this instant, a servant girl came near, and understanding the cause of our consternation, 'La, master,' said she, 'you don't go about the work in the right way. You should do like this; when, turning the collar completely upside down, she slipped it off in a moment, to our great humiliation and wonderment: each satisfied afresh, that there were heights of knowledge in the world to which we had not yet attained.—*Life of Coleridge*.

It is just so throughout all the gradations of Society, the highest are indebted to the lowliest, and there is but precious little difference between the king and the countrymen, and that difference is in favor of the latter, for the former is an artificial nobleman, and the latter one of nature's nobility.

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TO CORRESPONDENTS.

"E. A. D. of N. Y."—Carriages with a seat standard for the driver to turn square with the front wheels are now common in this City.

"N. A. of Pa."—There is no feed plan for a boiler so effectual as the force pump, our opinion is grounded on experience.

"S. T. H. of Pa."—An application has already been made for a solid metal bridge, with raised projections for the strings to pass through, to be secured in pins behind. Those engaged in the business are the best judges of your improvement, and the one we speak of. We make applications for Patents for others, never for ourselves, it would not answer for us to become interested in such things. It might lead to partiality.

"H. J. B. C. of N. C."—We shall have a most excellent index for this vol. Sci. Am.—It is true the letter must have gone to Washington, D. C. It was from Mr. Grant of Providence, R. I., with information for you.

"B, F. W. of Ga."—We have answered you by mail, also "F. S. of M. I."—G. W. of Mass."—"W. G. W. of Mass."

"J. Y. S. of Pa."—We cannot give you the name of the inventor of the reaping machine which you speak of,—from the fact that we cannot tell what reaping machine it is. There are more than one two, or three different reaping machines, among which, that of McCormick seems to be a favorite, and the principal establishment of manufacture, we believe, is in Chicago, Ill., Messrs. McCormick and Gray.

"A. B. of Ill."—No patent to our knowledge has been granted for a self-regulating wind mill on the double shaft principle.

"J. S. W. of Ala."—We are not yet able to answer your letter.

"C. S. of N. Y."—Your letter is too long for our columns.

"A. B. of Va."—Your package has been sent on per Leech & Co., last Tuesday.

"S. K. J. of Mass."—The slide valve is the best you can use. It is true that there are others better on account of less friction, such as the Trevethick and the three ported, but still we incline to the slide because it is so simple.

"S. J. W. of N. C."—We cannot answer the enquiries of non-subscribers.

"R. B. of Ohio."—Your invention is not only new but useful. There are no fears of a patent. It will be profitable to you.

The article of R. Bartholomew on Light and Color is necessarily delayed till next week.

We are indebted to the Hon J. Dix for Congressional documents, and his able speech on the Bill to establish a territorial government in Oregon.

We have received a copy of the charges preferred against Mr. E. Burke, Commissioner of Patents, by T. G. Clinton, assistant Examiner. We shall notice these charges in our next number.

Steam Omnibus.

Mr. William Harris, of St. Louis, Mo, is making an omnibus to run by steam. He will find it more expensive than a horse power.—A like scheme has been already tried and found too expensive.

A Splendid Locomotive.

A large and beautiful locomotive, called the "Dorchester," made for the Old Colony Railroad, has been built at the shops of the Springfield (Mass.) Car and Engine Company, and cost nine thousand dollars. Its weight is about twenty-two tons, and is the first twelve wheel locomotive, of its style and construction, that has been made in the United States. The four driving wheels are in the centre, and are of equal size, so that the machine will run as well one way as the other. It is a grand machine, in size and construction, and reflects credit on the mechanics of Springfield.

Salt Water Baths.

Messrs. Hudson & Marquis have recently erected a salt water bathing establishment on the verge of Brooklyn Heights, opposite New York. By the aid of steam machinery salt water is raised from the river below, a distance of some 200 feet, in a quantity sufficient to supply the baths and keep a fountain near by, also in operation.

Portrait of Gen. Taylor.

The nomination of this old hero for the Presidency has induced us to issue a new edition of his portrait The likeness which our portrait bears to life is said to be striking, while the price demanded for it is so small that every family in the Union may procure one. Price single 6 cents; six for 25 cents fifteen for 50 cents; or thirty five for $1.

Phrenological Almanac.

Messrs. Fowler & Wells have just published a Phrenological and Physiological Almanac for 1849. It is not only useful, but instructive and pleasing.

Patent Agency.

Applications for Patents made at this office, on the most reasonable terms. Neat drawings, specifications, and engravings of the first character, and cheaper than anywhere else. Notices of new inventions, Agency for the sale of Patent Rights, and all business of that nature, promptly attended to. Those who have patent rights to dispose of will find a good opportunity and field for their sale—such as Horse Power Machines and Waterwheels of every description. The largest circulation in the world for advertisements of inventions, &c.

Advertisements.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

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Taunton, Mass., - -	W. P. Seaver.
Utica, N. Y. - -	W. H. Canniff.
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THIS enterprise is destined to promote the interests of Literary Institutions, by furnishing Teachers, Pupils, Books, &c.

The register exhibits the names of hundreds in the profession who have high testimonials from respectable Institutions where they have officiated in various capacities as Principals, Professors, or Teachers, both in this country and in Europe Perhaps no undertaking was ever commenced under more favorable auspices. It is now known from Maine to Florida, and has induced an extensive correspondence, affording pleasing evidence that it is fast gaining the confidence and patronage of the Literary Institutions of this country. The satisfaction expressed by our numerous respectable patrons affords high encouragement, for in their opinion it must succeed and take an important place among the best enterprises of the age. We respectfully solicit the Circular of every Literary Institution in the Union for gratuitous distribution, also all communications adapted to promote the cause of education. All communications should be post paid.

E. H. WILCOX, Proprietor,
jy22 3t 124 Nassau st., N. Y.

TO MACHINISTS AND BUSINESS MEN.

THE advertiser wants a person to join him in experimenting and bringing out some important improvements in the Power Loom, which he believes he can make and for the capital invested would make a reasonable allowance of the right of the same. All communications must be post paid, to W H. J., Machinist, Lawrence City, Mass. jy22 3t*

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FOR THE
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July 1st, 1848.

Original Stories!! Great Improvements. Engravings every Week.

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THE CONTENTS

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M. Y. BEACH & SONS,
jy1 tf Sun Office, New York.

To Cotton Manufacturers.

THE Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and BETTER WORK with a less expenditure of power than any other Willow; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. It is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operating the machine in any peculiar or difficult situation. EDMUND BACON,
Superintendent Quinebaug Manufacturing Co.
j24 tf Norwich, Conn.

Patent Agency.

THE undersigned having established permanent agencies in England, Ireland, Scotland, France and Belgium (with the leading manufacturers and inventors of which countries he is personally acquainted), is enabled to transact all business entrusted to his care with perfect safety and dispatch; and such is the integrity, energy and legal ability of our agents, that the patentee is, in ninety-nine cases out of a hundred, sure to reap a rich harvest from any invention which passes through our hands.

Since the first of March last we have sold three patents in Great Britain for $17,580, and five in France for 38,000 francs.

For integrity, the undersigned refers to:—Horace Greeley, Esq. Tribune Buildings, New York.

CLINTON G. GILROY,

All letters must be POST PAID, and addressed to Clinton G. Gilroy, 71 Nassau st. New York. jy1 3m*

TALBOT'S PATENT REVOLVING BLIND HINGE.

Important to Builders and others.

THESE Hinges are for opening, closing, locking and completely regulating the blind upon the interior of the house without raising the sash. They are adapted to any kind of house, or style of finish. All communications, whether for the purchase of the article, or of Town, County or State rights, addressed to the subscriber, or to J. W. Ingell & Co., Taunton, Mass., will be promptly and satisfactorily attended to.

j3 tf L. T. TALBOT, Taunton, Mass.

LAW'S STAVE DRESSER AND JOINTER.

THE undersigned has perfected and put into very successful operation his Stave Machine.

It will **Dress** and **Joint** Staves of all shapes, kinds and dimensions, and of promiscuous widths, as they come from a mixed pile, at the rate of from 6 to 8 staves per minute, finishing them, before they leave the machine, ready for the truss hoop. They are both dressed and jointed very smoothly and handsomely, bringing each stave of equal width at the two ends WITHOUT WASTE OF STOCK and perfectly to correspond with every twist or crook, and with as little power in proportion to the work done, as any other machine.

For rights (which are indisputable,) or machines, address, post paid.

H. LAW, Wilmington, N. C.

N. B A machine will be in operation in New York or vicinity, in the course of the ensuing month.

jy15 2m

Agricultural Implements.

☞ Inventors and Manufacturers of superior Agricultural Impiements may find customers for their goods by applying at the Agricultural Warehouse of S. C. HILLS & CO. 43 Fulton st. m8

STEAM BOILER.

BENTLEY'S Patent Tubular and other Boilers of any size, shape or power, made to order, by
SAMUEL C. HILLS & CO.
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Lap welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

GENERAL PATENT AGENCY.
REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 189 Water to 43 Fulton street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.

m8 SAMUEL C. HILLS, Patent Agent.

Johnson & Robbins,
Consulting Engineers and Counsellors for Patentees.

Office on F street, opposite Patent Office, Washington, D. C. j17 tf

☞ The above is prepared to execute all orders at the shortest notice and on the most reasonable terms.

To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information concerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

Machinery.

PERSONS residing in any part of the United States who are in want of Machines Engines, Lathes, OR ANY DESCRIPTION OF MACHINERY, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long experience in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care MUNN & CO. a15

Important to the Public.

IT must not only be important, but interesting to the public to know at what establishment in New York Hats or Caps of the best quality and latest style can be purchased at the cheapest price The place is Knox's, where may be found every variety of a Hat from a shilling Palm Leaf to a Five Dollar Beaver, or a Cap from a two shilling oil cloth to a beautiful new style cloth for $1.50.

Knox's is THE place—128 Fulton street. m20 3m

Stave Dressing Machine.

THE undersigned are manufacturing and have now in operation, a machine for **Dressing Rived Staves,** which will dress 126 hogshead or 170 barrel staves per hour, with ONE HORSE POWER, and with TWO HORSES WILL DOUBLE THE NUMBER.

It will dress CROOKED and WINDING staves to perfection, and leave the full thickness on those with thin edge, a desideratum worthy of attention.

The machine is simple, compact and durable, and has received the approval of every practical Cooper that has witnessed its operations. We warrant it to perform FULLY EQUAL to our representation and shall be pleased to exhibit it to all who may favor us with a call. For further description and terms, apply to

WM. & E. T. FITCH, 2d., New Haven, Conn., or GEO. GILBERT, Westville, N. H. Co., Conn.

j3 3m*

NOTICE.

I have made application for a patent on a machine for turning irregular forms, such as lasts, spokes, &c.: this is to notify all persons who infringe on said machine or right, by making or using, or other wise, that they will be dealt with according to law.

ALLEN GOODMAN.
Dana, Mass., July 3, 1848. jy8 4t*

PREMIUM SLIDE LATHE.

THE subscriber is constantly building his improved Lathes of all sizes, from 7 to 30 feet long, and can execute orders at short notice.

JAMES T. PERKINS,
Hudson Machine Shop and Iron Works,
m11 Hudson, N. Y.

Ballard's Improved Jack Screw.
PATENTED.

THE advantages of this Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires,

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,

Of various sizes, power and price, constantly on hand at the manufactory,

No. 7 Eldridge street, near Division.
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Practical Receipts.

Prepared. by a German Chemist for the Scientific American.

CLEANING BUSTS AND PLASTER CORNICES.

The following simple process for cleaning plaster busts, statues and cornices of stains and spots, is very effectual.

Boil a rather thick paste of starch and spread the same cold by means of a soft brush upon the soiled surface of the plaster and permit it to dry in a sufficient airy place. After getting perfectly dry the paste will voluntarily drop off in thin scales and with them the dirt. Thus treated a plaster bust of bas-relief will appear like new, and will not incur any danger of losing expression or beauty.

ARTIFICIAL GEMS.

A new process for the artificial production of precious stones has been brought to light in one of the late sessions of the Academie at Paris, by M. Edelman, vice-director of the royal porcelain fabric at Sevres. He uses boracic acid as a medium to unite intimately the mineral bases constituting and composing the stones, and although a high temperature is required to evaporate the acid afterwards, it is still needed far below the melting heat. M. Edelman produced in this way by evaporating and heating a solution of magnesia and alumina in boracic acid in a porcelain oven, several minerals belonging to the family of *rubi spinella*. By a heat not reaching the melting point of iron, transparent crystals can be obtained in this manner, with nearly the properties and qualities of the diamond.

TESTS FOR LINEN GOODS.

The adulteration of linen has reached such an extent that it must be quite a treasure to know the means of discovering without fail a spurious article from the genuine. An unfailing process is founded upon the well established fact that sulphuric acid exerts a destructive power more readily and quicker upon the cotton fibre than on flax. After depriving the sample to be tested by repeated washing and boiling (without soap) of all starch and finish, lay the same for one or two minutes, (according to the thickness of the linen) in concentrated sulphuric acid. Remove the acid by repeated washing in water, and dry the piece by pressing it between blotting paper. If there has been any cotton in it, it will have disappeared, while the linen will be left.

TO MARK NAMES OR FIGURES ON PEARS AND APPLES

Cut a name, date, or figure on a piece of fine and thin paper, and wrap it around an apple or a pear on the side of the tree which is most exposed to the rays of the sun, about three weeks before the ripening time, and a very neat impression will be produced. On red apples it is necessary to cut out the letters on dark paper and paste every one singly.

Nitrate of Silver.

Nitrate of silver is prepared by saturating pure nitric acid of specific gravity 1.25 with pure silver, evaporating the solution and crystalizing the nitrate. When the drained crystals are fused in a platina capsule, and cast into slender cylinders in silver moulds, they constitute the lunar caustic of the surgeon.—This should be white, and unchangeable by light. It is deliquescent in moist air. The crystals are colorless, transparent 4 and 6 sided tables; they possess a bitter, acrid, and most disagreeable metallic taste; they dissolve in their own weight of cold, and in much less of hot water; are soluble in four parts of boiling alcohol, but not in nitric acid; they deflagrate on redhot coals, like all the nitrates, and detonate with phosphorus when the two are struck together on an anvil. They consist of 68.2 of oxyde, and 31.8 of acid. Nitrate of silver, when swallowed, is a very energetic poison; but it may be readily counteracted, by the administration of a dose of sea-salt, which converts the corrosive nitrate into the inert chloride of silver. Animal matter, immersed in a weak solution of neutral nitrate of silver, will keep unchanged for any length of time; and so will polished iron or steel Nitrate of silver is such a delicate reagent of hydrochloric or muriatic acid, as to show by a sensible cloud, the presence of one 113 millionth part of it, or one 7 millionth part of sea-salt in distilled water. It is much used under the name of indelible ink, for writing upon linen with a pen; for which purpose one drachm of the fused salt should be dissolved in three-quarters of an ounce of water, adding to the solution as much water of ammonia as will re-dissolve the precipitated oxyde, with sap green to color it, and gum-water to make the volume amount to one ounce. Traces written with this liquid should be first heated before a fire to expel the excess of ammonia, and then exposed to the sunbeam to blacken. Another mode of using nitrate of silver as an indelible ink, is to imbue the linen first with a solution of carbonate of soda, to dry the spot, and write upon it with a solution of nitrate of silver thickened with gum, and tinted with sap-green. It is also used in Photography.

The Action of the Acetate of Morphia on Children.

Dr. Melion believes, from the results of his experience, that the acetate of morphia possesses more powerful anodyne, and anti-spasdomic properties in children, than opium. He divides its effects, when internally administered, into three degrees. First: All the secretions and excretions of the internal organs become diminished, but the cutaneous exhalations becomes increased; hence the skin becomes moist, and a copious perspiration covers the head and upper parts of the body, but before this effect takes place, it shows its influence on the nervous system, and pain and convulsions cease; its influence lasts from three to six hours, the children then pass a quantity of pale urine, and cutaneous transpiration becomes normal. Second: The nervous system is the first part affected. The child becomes dull, drowsy, and gradually falls into a state of stupor; it lies with the eyes shut or half open, one more so than the other; the ball of the eye may be either fixed or may roll; the pupil is contracted and inactive; the heat of the head is increased, and the scalp and face are covered with copious perspiration; the child murmurs or speaks during its sleep, and moves its upper lip and lower jaw, as in the act of sucking; if it awakens from sleep, it desires to drink, and again falls asleep. This state may last for eight or twelve hours. In the third degree, venous congestion shows itself over the whole body, the child lies listless, the skin is purple, the temperature dimished, the pupils contracted and inactive, the pulsations weak, and the regular courses suppressed. Convulsions are apt to ensue, and death the result.

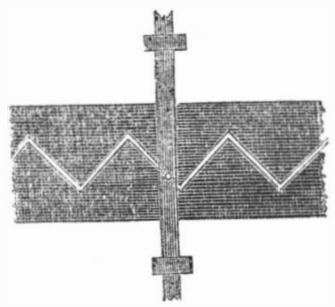
It may be used in chronic, diarrhœa, dentition for worms, and hooping cough, successfully, but it should be used cautiously, and many mothers, we are sorry to say, use it with a frightful disregard of any thing, but to hush a child to sleep. Lunacy in nine cases out of ten, is the result of paregoric administered in childhood. There is a responsibility resting upon every mother which is weighty with the weal or woe of future generations.

Velocity of Electricity.

The immense velocity of electricity makes it impossible to calculate it by direct observation; it would require to be many thousands of leagues long before the result could be expressed in the fractions of a second. Yet, Professor Wheatstone, of London, has devised apparatus for this purpose, among which is a double metallic mirror, to which he has given a velocity of eight hundred revolutions in a second of time. The professor calculates, from his experiments with this apparatus, that the velocity of electricity through a copper wire one fifteenth of an inch thick, exceeds the velocity of light across the planetary spaces, and that it is at least 288,000 miles per second. The professor adds that the light of electricity, in a state of great intensity, does not last the millionth part of a second: but that the eye is capable of distinctly perceiving objects which present themselves for this short space of time.

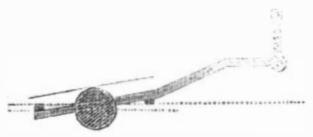
MECHANICAL MOVEMENTS.

Zigzag, or an Eccentric Motion.



This figure shows that the perpendicular rod will be alternately traversed in a perpendicular direction by the horizontal motion of the zigzag slot in which the pin is placed.—This movement can be most beautifully exhibited by having a hollow cylinder cut around with a slot, like that represented above, and fixed upon an axle that will revolve in suitable bearings. On this axle fix a cord and weight attached to it and insert the end of the rod or pendulum fixed with a cross piece in bearings parallel with the centre of the diamond slotted drum. Roll up the weight-cord on the axle and set the pendulum in motion when a regular and simple clock will be seen to have been set in operation—one which any person can construct who can cut a zigzag slot in a piece of tin and form it into a drum.

Dressing Warps.



This is an arrangement of a brush movement of a machine for dressing warps, in which the revolution of the crank on the right combined with the inclined plane, on which the small roller to the left is supported, produces the brushing on the warp, which is represented at the dotted horizontal line.

The dressing machines at present in use are very different from those used some years ago, and the brushes are not moved as represented above. Still as a mechanical movement, the idea of its action is well represented in the cut.

Mode of Preparing Tannate of Iron.

A very pure sulphate of iron is made by the action of dilute sulphuric acid on iron filings; from this sulphate, by means of carbonate of soda, a carbon of iron is precipitated, which is washed several times, and then dried on the stove. It is now pulverized and thrown by small portions at a time into a boiling solution of very pure tannic acid in a porcelain vessel—the proportions used being very nearly five parts of the carbonate to one of the acid, or 440 parts of the carbonate to ninety of the tannic acid. The fluid is to be stirred constantly till the effervescence ceases It is afterwards exposed to a heat equal to the boiling point of water, till it acquires the consistence of thick soup. It is then withdrawn from the fire, ad poured on porcelain plates, and dried with the assistance of heat. The tannate of iron thus obtained is of a crimson color, insipid, insoluble, uncrystallized, though before being dried, it appears in long needles. It may be administered either suspended in syrup, or still more conveniently in the form of pills. The dose is from eight to thirty grains a day. It acts more rapidly in persons of sanguine temperament

Extract of Dandelion.

This is becoming a new article of domestic manufacture, but which might have been produced fifty years ago, just as conveniently as at the present time, since the stock has always been abundant throughout the northern States, even in the highways, and costs nothing but the labor of digging. A steady demand of the article, which meets the general approval of physicians, has induced persons to commence the manufacture, which is very easily managed, and it seems that it will eventually put an end to the importation of the extract from England. The dandelion possesses a medicinal value far above the estimate often placed upon it. Were it a scarce plant, and the expense attending the preparation far beyond what it is, probably no medicine would have more ardent admirers.

Nutmeg Tree.

The nutmeg tree flourishes in Singapore near the Equator. It is raised from the nut in nurseries, where it remains until the fifth year, when it puts forth its blossoms, and shows its sex. It is then set out permanently. The trees are placed thirty feet apart, in diamond order— a male tree in the centre. They begin to bear in the eighth year, increasing for many years, and they pay a large profit. There is no nutmeg season. Every day in the year shows buds, blossoms, and fruit, in every stage of growth to maturity. The ripe fruit is singularly brilliant. The shell is glossy and black, and the mace it exposes when it bursts, is of bright scarlet, making the tree one of the most beautiful objects of the vegetable world.

More Mineral Paint.

A new bed of mineral paint has been discovered at Akron, Ohio, and said to be more valuable than the bed previously discovered and different in the chemical analysis. It is of a variety of beautiful shades from light grey to a purple. It makes a beautiful cement becoming very hard in a few days, and susceptible of a fine polish. It is incombustible, and water proof.

Adulteration of Olive Oil.

To so great an extent has olive oil been adulterated with lard oil, in England, that not long since, the Jewish Rabbis throughout the kingdom were requested to cause an examination to be made of the oil employed by their people for culinary purposes, lest they should be consuming the production of an unlcean animal.

Economy in Cooking Cranberries.

To each quart of berries, very shortly after the cooking of them is commenced, add a teaspoonful of salæratus. This will so neutralize the acidiferous juice which they contain, as to make it necessary to use only one-fourth part as much sugar as would have been requisite had they been cooked without using salæratus.

Turpentine and alkanet root make a beautiful purple color for staining marble for fancy chimney pieces.

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